

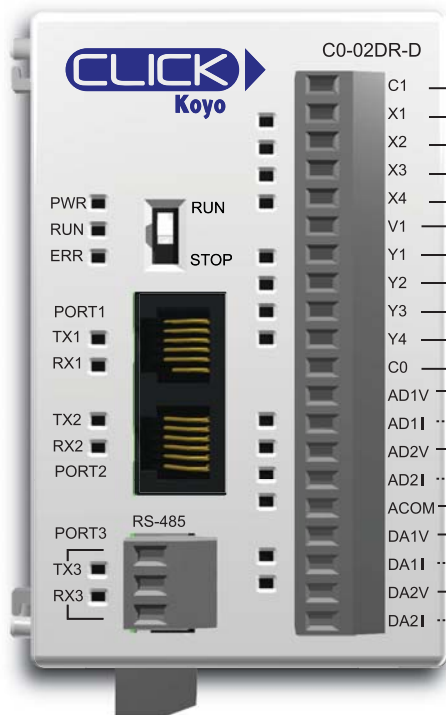
# Analog CPU Module Specifications

C0-02DR-D

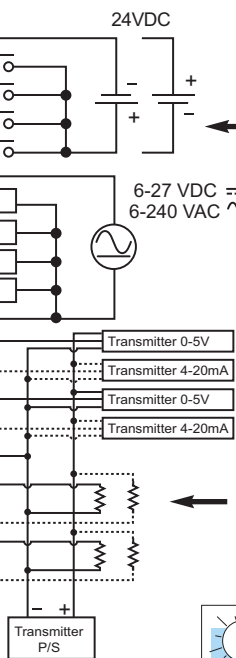


## 4 DC Input/4 Relay Output; 2 Analog In/2 Analog Out Micro PLC

CLICK PLC CPU, 4 DC in / 4 relay out, 2-Ch Analog In / 2-Ch Analog out (current/voltage selectable), requires a 24 VDC power supply, 8K steps program memory, Ladder Logic programming, built-in RS232C programming port and RS232C Modbus/ASCII communications port (configurable up to 115.2K baud) and 3-wire RS485 Modbus/ASCII communications port. Real Time Clock/Calendar and battery backed memory. Discrete Inputs: 4 DC inputs, 24 VDC sink/source, 1 common. Discrete Outputs: 4 relay outputs, 6-240 VAC / 6-27 VDC Form A (SPST) relays, 1.0A/point, 1 common. Analog Inputs: 2 channels, 4-20 mA, 0-5 VDC. Analog Outputs: 2 channels, 4-20 mA, 0-5 VDC. Removable terminal block included.



Wiring Diagram



See Discrete I/O Specifications - Inputs (X1 through X4)

See Discrete I/O Specifications - Outputs (Y1 through Y4)

See Analog Specifications - Voltage & Current Input (AD1V through AD2I)

See Analog Specifications - Voltage & Current Output (DA1V through DA2I)



**IMPORTANT:** YOU CAN USE ONLY ONE TERMINAL (VOLTAGE OR CURRENT) PER CHANNEL. YOU MUST ALSO SELECT THE ANALOG TYPE (VOLTAGE OR CURRENT) IN THE CPU BUILT-IN I/O SETUP IN THE **CLICK** PROGRAMMING SOFTWARE (PULL-DOWN MENU SETUP > CPU BUILT-IN I/O SETUP).

### General Specifications

<b>Current Consumption at 24VDC</b>	120 mA
<b>Terminal Block Replacement Part No.</b>	C0-16TB
<b>Weight</b>	5.6 oz (160 g)

### Typical Relay Life (Operations) at Room Temperature

Voltage & Load Type	Load Current: 1 A
30 VDC Resistive	300,000 cycles
30 VDC Solenoid	50,000 cycles
120 VAC Resistive	500,000 cycles
120 VAC Solenoid	200,000 cycles
ON to OFF = 1 cycle	

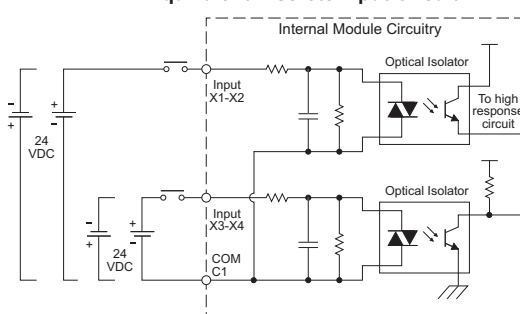
X1 - X4

### C0-02DR-D Discrete I/O Specifications - Inputs

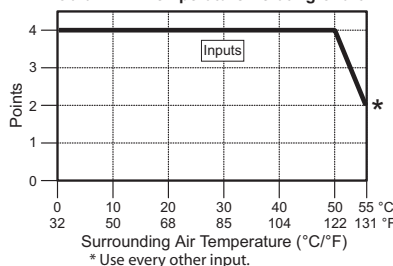
<b>Inputs per Module</b>	4 (Source/Sink)
<b>Operating Voltage Range</b>	24 VDC
<b>Input Voltage Range</b>	21.6 - 26.4 VDC
<b>Input Current</b>	X1-2: Typ 5 mA @ 24 VDC X3-4: Typ 4 mA @ 24 VDC
<b>Input Impedance</b>	X1-2: 4.7 kΩ @ 24 VDC X3-4: 6.8 kΩ @ 24 VDC
<b>ON Voltage Level</b>	X1-2: > 19 VDC X3-4: > 19 VDC
<b>OFF Voltage Level</b>	X1-2: < 4 VDC X3-4: < 7 VDC
<b>Minimum ON Current</b>	X1-2: 4.5 mA X3-4: 3.5 mA
<b>Maximum OFF Current</b>	X1-2: 0.1 mA X3-4: 0.5 mA
<b>OFF to ON Response</b>	X1-2: Typ 5 μs Max 20 μs* X3-4: Typ 2 ms Max 10 ms
<b>ON to OFF Response</b>	X1-2: Typ 5 μs Max 20 μs* X3-4: Typ 3 ms Max 10 ms
<b>Status Indicators</b>	Logic Side (4 points, green LED)
<b>Commons</b>	1 (4 points/common)

\* Threshold level is 70% amplitude.

### Equivalent Discrete Input Circuit



C0-02DR-D Temperature Derating Chart



There are no ZipLink pre-wired PLC connection cables and modules for the analog CPUs. (Cannot mix discrete I/O and analog I/O signals in a ZipLink cable.)

# Analog CPU Module Specifications

## C0-02DR-D (cont'd)

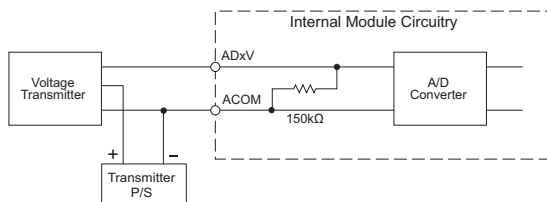
Y1 - Y4

C0-02DR-D Discrete I/O Specifications - Outputs	
<b>Outputs per Module</b>	4
<b>Operating Voltage Range</b>	6-27 VDC6 (-15%/+10%)/ 6-240 VAC (-10%/+10%)
<b>Output Type</b>	Relay, form A (SPST)
<b>AC Frequency</b>	47-63 Hz
<b>Maximum Current</b>	1 A/point (resistive)
<b>Minimum Load Current</b>	5 mA @ 5 VDC
<b>Maximum Inrush Current</b>	3 A for 10 ms
<b>OFF to ON Response</b>	< 15 ms
<b>ON to OFF Response</b>	< 15 ms
<b>Status Indicators</b>	Logic Side (4 points, red LED)
<b>Commons per Module</b>	1 (4 points/common)
<b>Fuse</b>	None

AD1V - AD2I

C0-02DR-D Analog Specifications - Voltage Input	
<b>Number of Channels</b>	2 (voltage/current selectable)
<b>Input Range</b>	0 - 5 VDC
<b>Resolution</b>	12 bit
<b>Conversion Time</b>	50 ms
<b>Input Impedance</b>	150 kΩ
<b>Input Stability</b>	±2 LSB maximum
<b>Full-Scale Calibration Error</b>	±1.2% maximum
<b>Offset Calibration Error</b>	±5 mV maximum
<b>Accuracy vs. Temperature Error</b>	±100 ppm / °C maximum

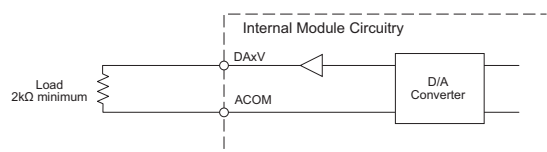
Analog Voltage Input Circuit



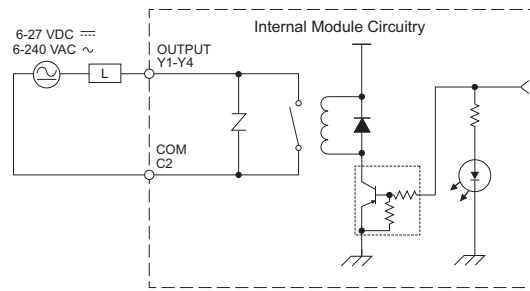
DA1V - DA2I

C0-02DR-D Analog Specifications - Voltage Output	
<b>Outputs per Module</b>	2 (voltage/current selectable)
<b>Output Range</b>	0 - 5 VDC
<b>Resolution</b>	12 bit
<b>Conversion Time</b>	1 ms
<b>Load Impedance</b>	2 kΩ minimum (output current 2.5 mA maximum)
<b>Full-Scale Calibration Error</b>	±0.8% maximum
<b>Offset Calibration Error</b>	±5 mV maximum
<b>Accuracy vs. Temperature Error</b>	±100 ppm / °C maximum

Analog Voltage Output Circuit

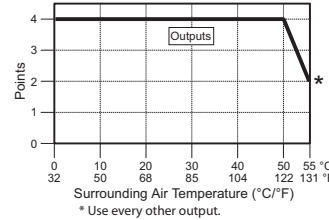


Equivalent Output Circuit



This circuit does not contain built-in protection.  
Install protection elements such as a fuse outside the module if necessary.

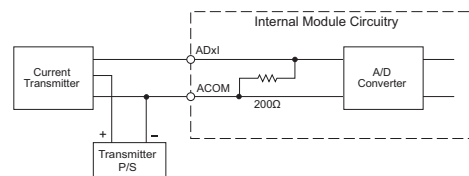
C0-02DR-D Temperature Derating Chart



\* Use every other output.

C0-02DR-D Analog Specifications - Current Input	
<b>Inputs per Module</b>	2 (voltage/current selectable)
<b>Input Range</b>	4 - 20 mA
<b>Resolution</b>	12 bit
<b>Conversion Time</b>	50 ms
<b>Input Impedance</b>	200 Ω
<b>Input Stability</b>	±2 LSB
<b>Full-Scale Calibration Error</b>	±1% maximum
<b>Offset Calibration Error</b>	±0.1 mA maximum
<b>Accuracy vs. Temperature Error</b>	±100 ppm / °C maximum

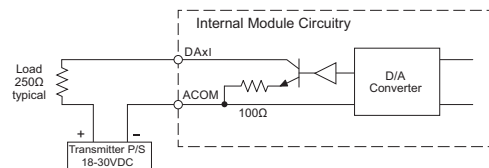
Analog Current Input Circuit



C0-02DR-D Analog Specifications - Current Output

<b>Outputs per Module</b>	2 (voltage/current selectable)
<b>Output Range</b>	4 - 20 mA
<b>Resolution</b>	12 bit
<b>Conversion Time</b>	1 ms
<b>Loop Supply Voltage</b>	DC 18 - 30 V
<b>Load Impedance</b>	250Ω Load Power Supply: DC 18V: 600Ω maximum DC 24V: 900Ω maximum DC 30V: 1200Ω maximum
<b>Full-Scale Calibration Error</b>	±1% maximum
<b>Offset Calibration Error</b>	±0.1 mA maximum
<b>Accuracy vs. Temperature Error</b>	±100 ppm / °C maximum

Analog Current Output Circuit



# CLICK Specifications

## General Specifications For All CLICK PLC Products

These general specifications apply to all CLICK CPUs, optional I/O modules, and optional power supply products. Please refer to the appropriate I/O temperature derating charts under both the CPU and I/O module specifications to determine best operating conditions based on the ambient temperature of your particular application.

General Specifications	
<b>Power Input Voltage Range</b>	20-28 VDC
<b>Maximum Power Consumption</b>	5 W (No 5 V use from communication port)
<b>Maximum Inrush Current</b>	30 A (less than 1ms)
<b>Acceptable External Power Drop</b>	Max 10 ms
<b>Operating Temperature</b>	32°F to 131°F (0°C to 55°C), IEC 60068-2-14 (Test Nb, Thermal Shock)
<b>Storage Temperature</b>	-4°F to 158°F (-20°C to 70°C) IEC 60068-2-1 (Test Ab, Cold) IEC 60068-2-2 (Test Bb, Dry Heat) IEC 60068-2-14 (Test Na, Thermal Shock)
<b>Ambient Humidity</b>	30% to 95% relative humidity (non-condensing)
<b>Environmental Air</b>	No corrosive gases. Environmental pollution level is 2 (UL840)
<b>Vibration</b>	MIL STD 810C, Method 514.2, EC60068-2-6 JIS C60068-2-6 (Sine wave vibration test)
<b>Shock</b>	MIL STD 810C, Method 516.2, IEC60068-2-27, JIS C60068-2-27
<b>Noise Immunity</b>	Comply with NEMA ICS3-304, Impulse noise 1μs, 1000V EN61000-4-2 (ESD), EN61000-4-3 (RFI), EN61000-4-4 (FTB) EN61000-4-5 (Surge), EN61000-4-6 (Conducted) EN61000-4-8 (Power frequency magnetic field immunity) RFI: No interference measured at 150, 450 MHz (5w/15cm)
<b>Emissions</b>	EN55011:1998 Class A
<b>Agency Approvals</b>	UL508 (File No. E157382, E316037); CE (EN61131-2)
<b>Other</b>	RoHS instruction conformity

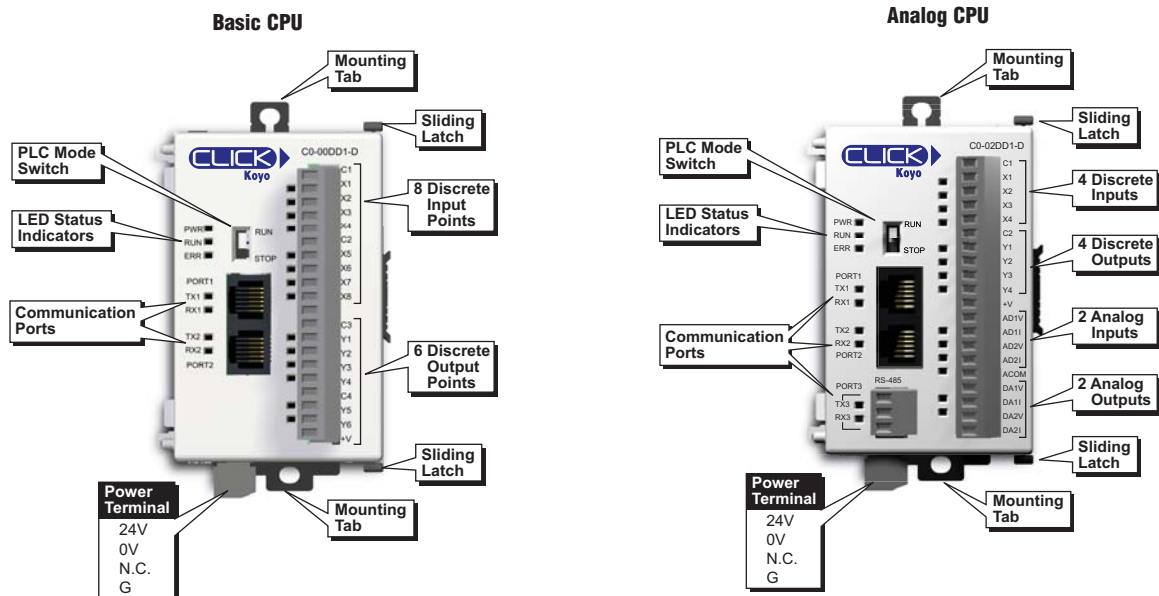
## CPU Module Specifications

These specifications apply to all the CPU modules.

CPU Module Specifications		
	Basic CPU	Analog CPU
<b>Control Method</b>	Stored Program/Cyclic execution method	
<b>I/O Numbering System</b>	Fixed in Decimal	Fixed in Decimal
<b>Ladder Memory (steps)</b>	8000	8000
<b>Total Data Memory (words)</b>	8000	8000
<b>Contact Execution (boolean)</b>	< 0.6 us	< 0.6 us
<b>Typical Scan (1k boolean)</b>	1-2 ms	1-2 ms
<b>RLL Ladder Style Programming</b>	Yes	Yes
<b>Run Time Edits</b>	No	No
<b>Scan</b>	Variable / fixed	Variable / fixed
<b>CLICK Programming Software for Windows</b>	Yes	Yes
<b>Built-in Communication Ports</b>	Yes (two RS-232 ports)	Yes (2 RS-232 and 1 RS-485 ports)
<b>FLASH Memory</b>	Standard on CPU	Standard on CPU
<b>Built-in Discrete I/O points</b>	8 inputs, 6 outputs	4 inputs, 4 outputs
<b>Built-in Analog I/O Channels</b>	No	2 inputs, 2 outputs
<b>Number of Instructions Available</b>	21	21
<b>Control Relays</b>	2000	2000
<b>System Control Relays</b>	1000	1000
<b>Timers</b>	500	500
<b>Counters</b>	250	250
<b>Interrupt</b>	Yes (external: 8 / timed: 4)	Yes (external: 4 / timed: 4)
<b>Subroutines</b>	Yes	Yes
<b>For/Next Loops</b>	Yes	Yes
<b>Math (Integer and Hex)</b>	Yes	Yes
<b>Drum Sequencer Instruction</b>	Yes	Yes
<b>Internal Diagnostics</b>	Yes	Yes
<b>Password Security</b>	Yes	Yes
<b>System Error Log</b>	Yes	Yes
<b>User Error Log</b>	No	No
<b>Memory Backup</b>	Super Capacitor	Super Capacitor + Battery
<b>Battery Backup</b>	No	Yes (battery part no. D2-BAT-1)
<b>Calendar/Clock</b>	No	Yes
<b>I/O Terminal Block Replacement</b>	ADC p/n C0-16TB	ADC p/n C0-16TB
<b>Communication Port &amp; Terminal Block Replacement</b>	N/A	ADC p/n C0-03TB
<b>24 VDC Power Terminal Block Replacement</b>	ADC p/n C0-4TB	ADC p/n C0-4TB

# CLICK Specifications

## CPU Features

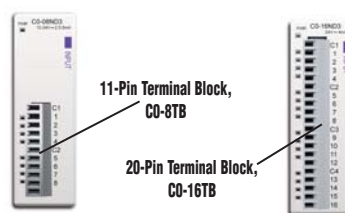


## CPU LED Status Indicators



## I/O Terminal Block Specifications for CPUs and I/O Modules

11-pin Terminal Block Specifications	
Connector Type	Pluggable Terminal Block
Number of Pins	11 pt
Pitch	3.50 mm
Wire Range	28-16 AWG
Wire Strip Length	7 mm
Screw Size	M2.0
Screw Torque	2.0 to 2.2 lb-inch
ADC Part Number	CO-8TB



20-pin Terminal Block Specifications	
Connector Type	Pluggable Terminal Block
Number of Pins	20 pt
Pitch	3.50 mm
Wire Range	28-16 AWG
Wire Strip Length	7 mm
Screw Size	M2.0
Screw Torque	2.0 to 2.2 lb-inch
ADC Part Number	CO-16TB

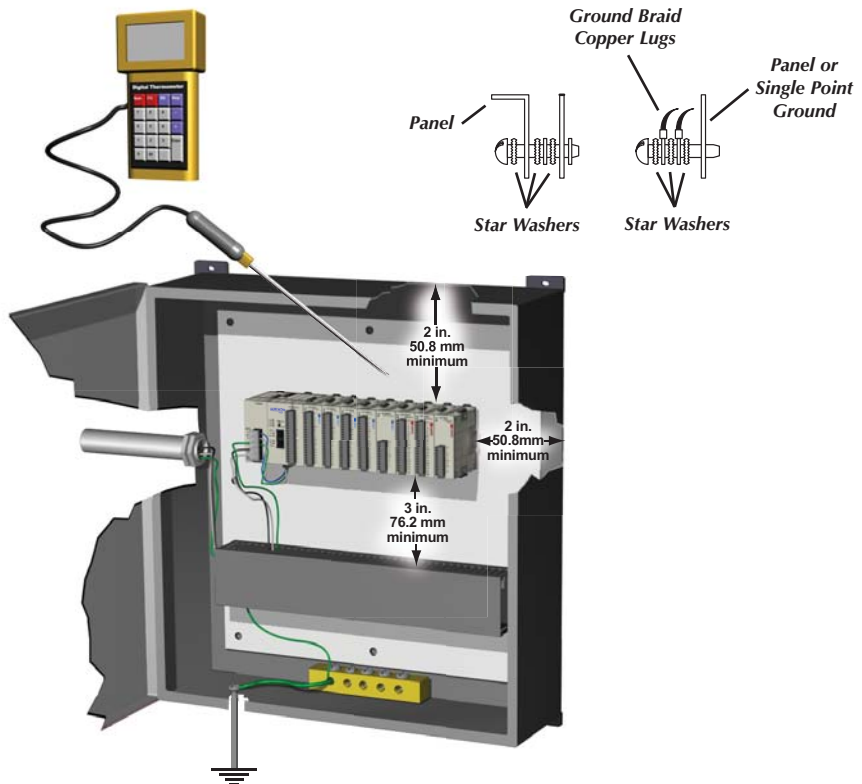
# Product Dimensions and Installation

It is important to understand the installation requirements for your CLICK system. Your knowledge of these requirements will help ensure that your system operates within its environmental and electrical limits.

## Plan for Safety

This catalog should never be used as a replacement for the user manual.

You can purchase, download free, or view online the user manuals for these products. Manual C0-USER-M is the user manual for the CLICK PLC. This user manual contains important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.

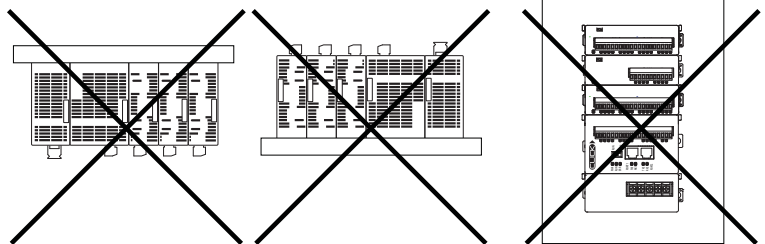
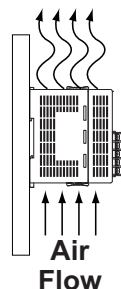


**NOTE:** THERE IS A MINIMUM CLEARANCE REQUIREMENT OF 2 INCHES (51 MM) BETWEEN THE CLICK PLC AND THE PANEL DOOR OR ANY DEVICES MOUNTED IN THE PANEL DOOR. THE SAME CLEARANCE IS REQUIRED BETWEEN THE PLC AND ANY SIDE OF THE ENCLOSURE. A MINIMUM CLEARANCE OF 3 INCHES (76 MM) IS REQUIRED BETWEEN THE PLC AND A WIREWAY OR ANY HEAT PRODUCING DEVICE.



## Mounting Orientation

CLICK PLCs must be mounted properly to ensure ample airflow for cooling purposes. It is important to follow the unit orientation requirements and to verify that the PLC's dimensions are compatible with your application. Notice particularly the grounding requirements and the recommended cabinet clearances.



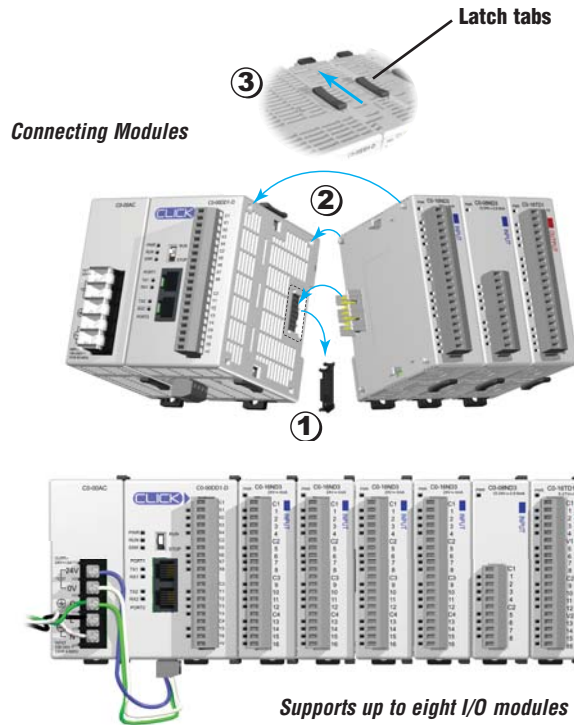


# Product Dimensions and Installation

## Connecting the Modules Together

CLICK CPUs, I/O modules and power supplies connect together using the extension ports that are located on the side panels of the modules (no PLC back-plane/base required).

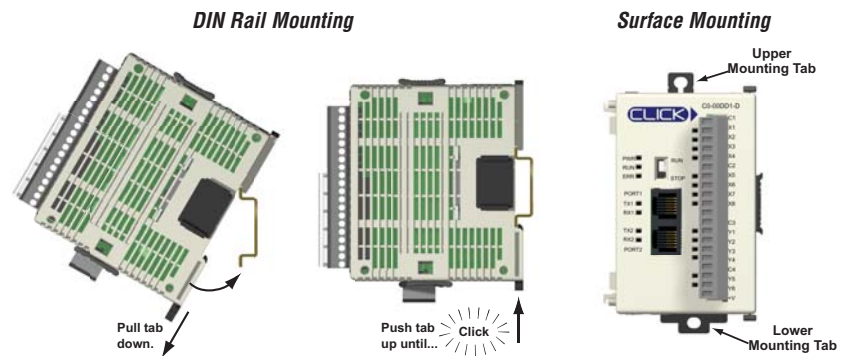
1. Remove extension port covers and slide the latch tabs forward.
2. Align the module pins and connection plug, and press the I/O module onto the right side of the CPU.
3. Slide the latch tabs backward to lock the modules together.



## Mounting

The CLICK PLC system, which includes the CLICK power supplies, CPU modules, and I/O modules, can be mounted in one of two ways.

1. DIN rail mounted
2. Surface mounted using the built-in upper and lower mounting tabs.



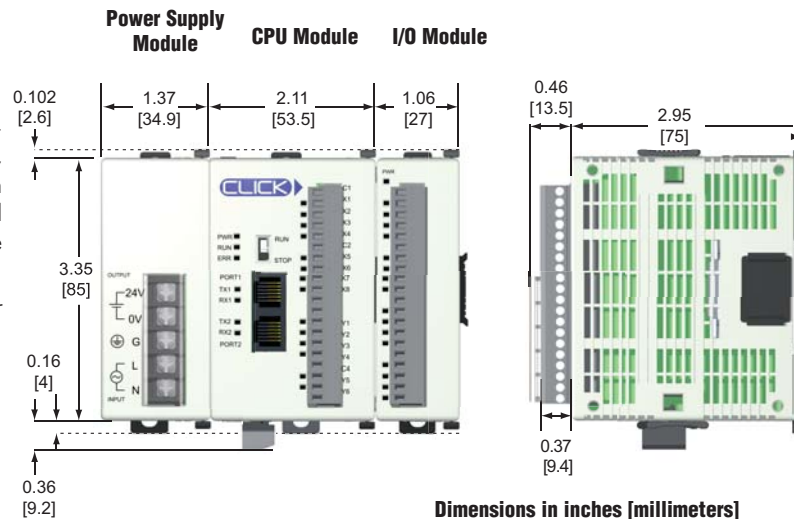
## Unit Dimensions

These diagrams show the outside dimensions of the CLICK power supply, CPU, and I/O modules. The CLICK PLC system is designed to be mounted on standard 35mm DIN rail, or it can be surface mounted.

Allow proper spacing from other components within an enclosure.

### Maximum system:

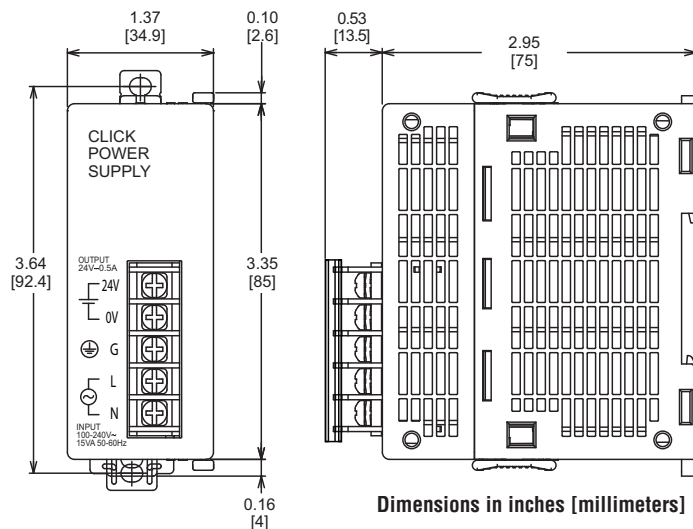
Power Supply + CPU + 8 I/O modules.



# Product Dimensions and Installation

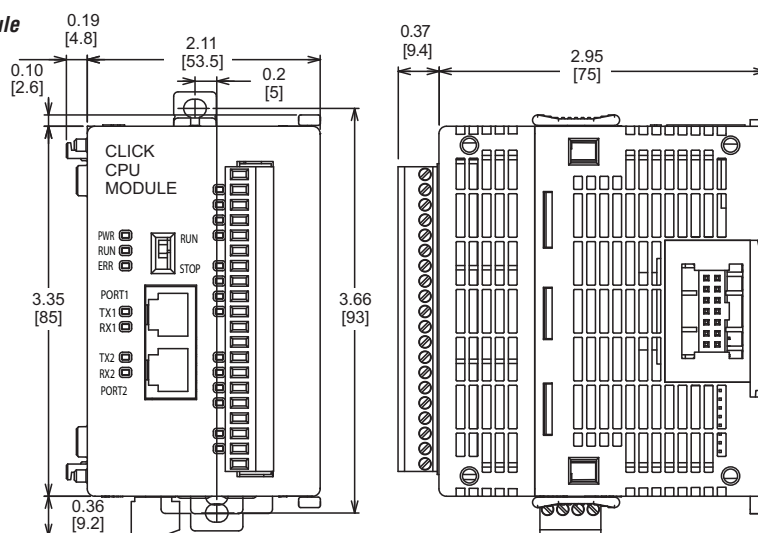
## Unit Dimensions

**Power Supply**



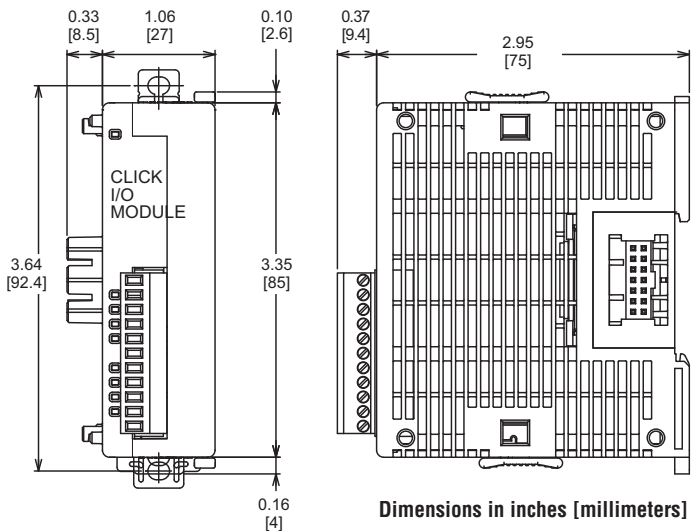
Dimensions in inches [millimeters]

**CPU Module**



Dimensions in inches [millimeters]

**I/O Module**



Dimensions in inches [millimeters]